GeoBulletin is distributed weekly, by E-mail. Contributions are requested! If you have a news item, a request, an announcement etc. email it to geodept@geology.wisc.edu or leave it at the office, Room 225 by Noon on Monday.

**Weeks Lecture**

*Speaker list – Spring 2012*

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**JOB OPENINGS:**

- The Department of Earth Sciences at IUPUI is hiring an Instrumentation and Academic Specialist
- Postdoctoral Research Associate - University of Utah
- ARCADIS is seeking a detail oriented, well organized, graduate geologist with less than 2 years of related experience to join our Midland, Texas office.
- Postdoctoral position: Studying diffuse uranium release from mine waste rocks
- University of Helsinki : POST-DOCTORAL RESEARCHER
- GEOLOGY FACULTY POSITION - Arkansas Tech University
JOB OPENINGS:

The Department of Earth Sciences at IUPUI is hiring an Instrumentation and Academic Specialist to manage research instrumentation, provide departmental laboratory safety compliance, and support teaching. The primary purpose of this position is to provide assistance to the Department and faculty through oversight of the Earth Science research infrastructure, with particular focus on managing and maintaining the efficient operation of the Department’s instruments (e.g. GCs, HR-ICP-MS, GS-MS, gas-source irMS, ICP-ES, XRD, CHN analyzer and computer interfaces). The Academic Specialist will provide general laboratory research support, such as user training, overseeing sample preparation and analyses, instrument troubleshooting, and instrument maintenance. Laboratory support also includes ensuring departmental and building safety by serving as laboratory safety coordinator. In addition, this position will provide teaching support including maintaining the rock and mineral collections for course instruction as well as helping students to coordinate laboratory and field activities. Depending on the person’s qualifications, duties may include occasional course instruction in the Department of Earth Sciences and/or leading occasional fieldtrips. Finally the Academic specialist may be responsible for providing general departmental support by performing administrative and other miscellaneous tasks such as coordinating maintenance of vehicles, equipment and property. This is a full-time position, renewable on a 12-month basis. Analytical and instrumentation experience is required. Applicants must have an M.S. degree or higher in earth science, environmental science, chemistry, biology or a related field.

IUPUI is an Equal Opportunity/Affirmative Action educator and employer and affords reasonable accommodations to persons with disabilities.

http://www.iupui.edu/~oeo/academicjobs/acad_jobs.htm

Postdoctoral Research Associate - University of Utah

A postdoctoral research associate position in isotope hydrology and hydroecology is available through the University of Utah Department of Geology and Geophysics (http://www.earth.utah.edu/). We are seeking a candidate with experience in stable water isotope (H and O) systematics to conduct observational and modeling studies of artificial water distribution systems in the western USA and their impact on local to regional hydro- and eco-systems. The position is available starting mid-late summer, 2012, with an initial appointment of 1 year and potential for renewal for one additional year. Applications will be reviewed on receipt and until the position is filled. The postdoctoral researcher will have access to a wide range of analytical and modeling resources, including a cluster of new field-deployable isotope ratio infrared spectroscopy instruments for liquid and vapor-phase water measurements, traditional mass spectrometric instruments at the UU-SIRFER facility (http://sirfer.utah.edu/), and spatial analysis tools developed as a component of the IsoMAP project (http://isomap.org). A wide range of opportunities for collaboration and project and career development will be available in association with efforts such as the campus-wide Global Change and Ecosystems Center (http://environment.utah.edu/) and a newly funded NSF-
Macrosystems Biology program in continental-scale isotope ecology (http://wateriso.eas.purdue.edu/itce/). Examples on ongoing research activities in our group are available at http://www.eas.purdue.edu/ireh/.

A strong background in isotope geoscience or a related area is required, and previous experience with spectroscopic measurement of water isotope ratios and/or GIS would be beneficial. This position is limited to applicants who are U.S. citizens. To apply, please send a current CV, brief description of your research experience and interests, and a list of 3 potential letter-writers to Gabe Bowen (gabe@purdue.edu).

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ARCADIS is seeking a detail oriented, well organized, graduate geologist with less than 2 years of related experience to join our Midland, Texas office.

Candidate will be responsible for assisting Project Managers and Task Managers to complete a variety of tasks including developing and implementing site investigation work plans, installation of monitoring wells, collection of soil and/or groundwater samples, and lithologic logging of borings.

Basic and Required Qualifications:
* Minimum years of experience: 0
* Education required: BA/BS Degree in Geology or expect to earn in the next 3-6 months

Additional and Preferred Qualifications:
* Education preferred: BS Degree in Geology
* Registrations/Certifications preferred: 40-hr. HAZWOPER
* Years’ experience preferred: 0-6 months
* Skills preferred: Microsoft Access, EXCEL, PowerPoint
* This position does requires travel. Travel amount is greater than 50%.
* A valid driver's license and clean driving record is required for this position.
* This position does not manage others.

ARCADIS is an Equal Opportunity Employer M/F/D/V

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Postdoctoral position: Studying diffuse uranium release from mine waste rocks

Uranium ore has been mined in France for nearly 50 years from about 200 sites. This exploitation, which began right after World War II, ended in 2001 with the closure of Jouac site (Haute-Vienne). The evolutions of uranium mining industry in France led to the fact that AREVA is nowadays in charge of the reclamation and the radiological and environmental survey of all these 200 sites. During the exploitation, 52 Mt of ores have been processed to produce about 76 000 t of uranium, 52 Mt of process mining residues and 200 Mt of waste rocks.

Waste rocks are overburden rocks overlying the ore or rocks not processed for their low uranium content. As they are initially located in contact with mineralized uranium zones, their uranium concentration is usually higher than the geochemical background. Either stocked in heaps or used to fill up open pits during restoration work (as cover of mine process residues storages), these rocks undergo a meteoritic alteration which has to be evaluated. Indeed, weathering by meteoritic waters at the surface and through mine tailings can lead to mechanical fracture and mobilization of some components, such as uranium. At the same time or later on, secondary minerals neoformation can also concentrate these elements by sorption or precipitation processes, and thus impact on the kinetics of geochemical transfers. Some waste rocks heaps are vegetalized, even with the development of protosoils, creating a critical zone with specific characteristics. All these phenomena can lead to mass transfers that should be quantified to be able to limit uranium migration downstream of waste rocks heaps.

The goal of this study is to trace and identify reaction pathways controlling uranium mobility in waste rocks. As most of uranium orebodies that have been mined in France are located in granitic areas, the present study will
focus on the sugergene evolution of granite from Limousin region. For this purpose, rock samples and water samples will be collected from several sites. A thorough study of the weathering alteration processes will be performed through the identification of the uranium-bearing phases, whether inherited or neoformed. These observations and characterizations will be performed by XRD, spectrometry techniques, ICP-MS, electron microscopy techniques (SEM and TEM), electron microprobe. Thorough spectroscopic characterizations on synchrotron beamline will bring information on uranium speciation. Last, aging experiments in the laboratory can be performed in order to focus on the most reactive mineral phases. The whole set of data will be used and integrated to geochemical modelings that take into account the main phenomena controlling uranium mobility.

Among the required competencies:
- Mineralogy
- Petrology
- Geochemistry of trace elements and/or uranium
- Knowledge of synchrotron analytical techniques
- Geochemistry and mineralogy of low temperature conditions and critical zone

Duration: 18 months (renewable)
Localization: IMPMC – UPMC (University of Paris VI) & AREVA (Paris)

Contacts: Please send CV and application letter to:
- IMPMC – UPMC
  Martine GERARD,
  martine.gerard@impmc.upmc.fr
  Georges CALAS,
  georges.calas@impmc.upmc.fr

- AREVA
  Michael DESCOSTES,
  michael.descostes@areva.com;
  Vannapha PHROMMAVANH,
  vannapha.phrommavanh@areva.com

University of Helsinki: POST-DOCTORAL RESEARCHER in the field of structural geology and metamorphic petrology for two years starting from the 1st of August 2012. The position is funded by the Finnish Academy funded MIDCRUST-research consortium. The consortium studies 3D evolution of thickened Precambrian continental crust and focuses on post-collisional processes. PDR is expected to take part in the ongoing field work in central and southern Finland. Applications should be at the Department of Geosciences and Geography by 16th of April.

For further information please see the web page http://www.helsinki.fi/recruitment/index.html?id=54228

Contact
Dr. Annakaisa Korja,
Department of Geosciences and Geography, POB 68
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annakaisa.korja@helsinki.fi
tel: +358-9-191 51606

GEOLOGY FACULTY POSITION - Arkansas Tech University
Arkansas Tech University invites applications for a tenure-track Assistant Professor of Geology to begin August, 2012. The successful applicant will have a Ph.D. (ABD considered) at the time of employment and demonstrated ability to perform teaching duties to include Mineralogy, Petrology, introductory geology courses, and other courses as assigned totaling 12 credit hours per semester. Preferred candidates will have a background in Subsurface Geology and experience in Petroleum Exploration. Successful candidates will also demonstrate the potential for developing a vibrant research program and service to the University and community. The ATU Geology Program
has approximately 50 undergraduate majors and is located within 1 hour of world-class field opportunities in the Ouachitas and Ozarks. Send letter of application including curriculum vita, official transcripts, teaching philosophy, and description of research interests and goals that involve undergraduates along with three letters of reference prior to April 13, 2012 to Dr. Jeff Robertson, Dean, College of Natural and Health Sciences, Arkansas Tech University, 1701 N. Boulder Ave., Russellville, AR 72801-2222 or jrobertson@atu.edu. EOE http://www.atu.edu/nhs

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THE UNIVERSITY OF LIVERPOOL-GEOLGY AND GEOPHYSICS-SCHOOL OF ENVIRONMENTAL SCIENCES - Postdoctoral Research Associate and PhD

Postdoctoral Research Associate – 3 year position
PhD- 3.5 year position

Fluid flow in the Earth: the influence of dehydration reactions and stress

Postdoctoral Research Associate
We seek an innovative researcher to work with us on the mechanical, chemical and fluid flow effects of dehydration. You will run high-pressure, high-temperature rock deformation experiments to explore the evolution of porosity, permeability and reaction rate using gypsum and serpentinite. You will characterize the resulting microstructures to ascertain what controlled that evolution. The experimental constraints will be used to create a conceptual and numerical model for dehydration reactions in the Earth and their consequences, such as earthquake generation. You must have experience of experimental rock deformation. Familiarity with microstructural investigations, thermodynamics and/or numerical modeling is desirable.

PhD position
You will work on a related theme to the PDRA, but studying how mixed fluids (H2O-Ar, H2O-CO2 etc.) react with hydrous solids in the absence of deformation.

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The National Institute of Standards and Technology (NIST), Gaithersburg, MD, seeks applicants for a postdoctoral position. The successful candidate must have a Ph.D. and experience in radio/anlytical chemistry, isotope dilution, a, b, g spectrometry, mass spectrometry and isotope geochemistry. Experience in radio/geo-chronometry is especially desirable. We are seeking a highly motivate post-doctoral fellow to develop methods for the characterization of nuclear forensics materials. This work would be in support of the reference materials for nuclear forensics initiative at the NIST supported by DHS. Potential projects include (1) development of chemical separation and measurement methods for the characterization of actinides, trace elements and isotopics of bulk material and particles in natural (e.g. sea sediment, Peruvian soil) and urban (e.g. composite glass material) matrices, (2) development of dissolution and extraction methods for Pu and U from various matrices (3) method development for characterization of Japanese fallout material. Furthermore, we will have projects involving U234/Th230 chronometry and preparation/verification of mixed isotope reference materials (Am 241/243).

TYPE OF WORK: Clean lab chemistry (including dissolution and column chemistry techniques), radiochemistry, a, b, g spectrometry, mass spectrometry, geochronology techniques, modeling.

REQUIREMENTS: US citizenship required. Although different backgrounds will be considered, familiarity with radio/anlytical chemistry, isotope dilution techniques, and a, b, g and mass spectrometry are required. Preference will be given to candidates who have experience in radio/geo-chronometry techniques.

SALARY: US $53,000, plus benefits

TERM: 3 years

START DATE: Immediately
ENQUIRIES: Send a letter or email containing: (1) an explanation of your previous experience; (2) CV and letter of interest; (3) names and full contact addresses (email, phone, and fax) of three references; to Dr. Kenneth Inn (kenneth.inn@nist.gov) or Dr. Jacqueline Mann (jacqueline.mann@nist.gov).

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The Incorporated Research Institutions for Seismology (IRIS) Program for Array Seismic Studies of the Continental Lithosphere (PASSCAL) has an opening for a 2012 summer student intern at the IRIS PASSCAL Instrument Center at New Mexico Tech. The duration of the internship is flexible (up to three months). If scheduling allows, the intern will also take part in the late May IRIS Education and Outreach Orientation Week at New Mexico Tech (www.iris.edu/hq/internship/about/orientation) in association with the IRIS Summer Undergraduate Internship program. We seek an advanced undergraduate or graduate student with seismic experiment design, field methods, seismograph electronics, and data processing interests. For general information, please visit www.passcal.nmt.edu, or contact PASSCAL Instrument Center Director Bruce Beaudoin (575-835-5070; bruce@passcal.nmt.edu). The internship includes a weekly stipend, living expenses, round-trip travel funds to Socorro, NM, and tuition support to cover NMT summer registration as a special graduate student. To apply, send a letter summarizing interests, college transcripts, and at least one appropriate letter of recommendation to: PASSCAL Summer Intern Committee, c/o Bruce Beaudoin, IRIS PASSCAL Instrument Center, New Mexico Tech, 100 East Rd., Socorro, NM 87801. For full consideration, materials must be received by April 6, 2012.

Details: The internship is designed for a student with a background in Earth Science who is interested in seismic field methods, electronics, and data processing. The IRIS/PASSCAL Instrument Center, funded by the National Science Foundation via the IRIS consortium, maintains and helps deploy large numbers portable seismographs (Reftek and Quanterra), broadband sensors (Streckheisen, Guralp, Nanometrics), portable telemetered networks, and high-resolution cable reflection systems (Geometrics) that are heavily utilized by the U.S. research community and international partners. The successful candidate will learn about the technology and maintenance of state-of-the-art seismic equipment, potentially assist in deployments in the US and overseas, and participate in seismic data processing under the direction of the Instrument Center Director and Staff. The intern will register as a special student for 6 credits of Directed Study (Geophysics 590) under the advisorship of PASSCAL Instrument Center P.I. and NMT Geophysics Professor Richard Aster. At least one week prior to the conclusion of the internship, the intern will submit a report not to exceed 15 pages summarizing tasks performed and observations/suggestions pertinent to PASSCAL program operations and future Education and Outreach efforts. The intern will be given a personal allowance of $575/week for tuition, fees, books, and living expenses. Transportation costs to and from New Mexico Tech will be reimbursed up to $3,500, as will room and board costs up to $1700.

For further information, please contact Bruce Beaudoin (see above) or Rick Aster (aster@ees.nmt.edu; 575-835-5924).

******** HAVE A GREAT WEEKEND ********